

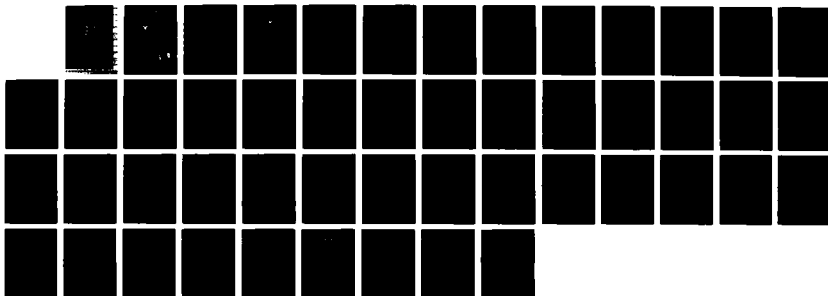
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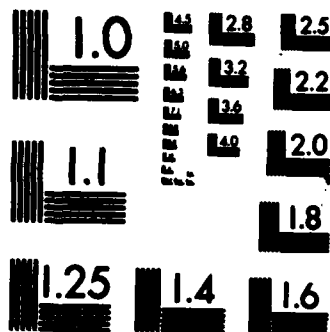
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STUDENT REPORT

SABERS, LANCES, B-17s AND F-105s:
AN ESSAY ON THE HUMAN ELEMENT,
NAPOLEONIC WARFARE, AND AIR COMBAT

MAJOR MARK K. WELLS, USAF 87-2690

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AN ESSAY ON THE HUMAN ELEMENT, NAPOLEONIC WARFARE,
AND AIR COMBAT

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PREFACE

The purpose of the following article is to demonstrate the importance of "human element" military history to Air Force officers. The essay analyzes and compares combat situations during early 19th-century ground warfare and modern aerial combat. Based on a Clausewitzian understanding of combat behavior, enough comparisons can be demonstrated to show that a human element approach to military history is a valuable one.

I am indebted to Wing Commander John P. Dacre, Royal Air Force, and Doctor David MacIsaac for their helpful criticism. Subject to clearance, this manuscript will be submitted to The Air Power Journal for consideration.

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ABOUT THE AUTHOR

MAJOR MARK K. WELLS, USAF (B.S., United States Air Force Academy; M.A., Texas Tech University) is a student at Air Command and Staff College, Maxwell AFB, Alabama. A senior pilot with more than 2000 flying hours, he has served as an Assistant Professor of Military History at the Air Force Academy, an Instructor Pilot in T-37s at Reese AFB, and as an Aircraft Commander in KC-135s at Fairchild AFB. Major Wells has made presentations on a range of military history topics at various academic conferences. Most recently he wrote a paper for the Southwestern Social Science Association on "Combat Leadership in the Crimea." He has written two book reviews for Air University Review. A distinguished graduate of Squadron Officers School, Major Wells won a fellowship from the National Endowment for the Humanities in 1985. He was recently nominated by the Air Force Academy to pursue a Ph.D in military history.

PRELIMINARY COMMENTS: THE AIR FORCE AND THE STUDY OF
MILITARY HISTORY

For the military professional, there is no simple formula to learn warfighting. Gaining that knowledge is a continuous process that is the product of institutionalized education and training, experience, and personal effort.

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Thanks in large measure to the Project Warrior program, the study of military history has recently enjoyed something of a renaissance in the Air Force.¹ An increasing number of officers and airmen participate in studies directed towards understanding the history of the profession of arms. Many bases have large, dynamic programs featuring a number of stimulating activities. Wargaming clubs and reading groups are popular. Several universities offer cooperative graduate programs in military history or related fields.

The study of military history has also become more popular in the civilian academic community. For years something of a pariah, especially among American scholars in the 1960s and early 1970s, military history finds itself suddenly in vogue.² In the years since the end of the Vietnam war some of the more controversial arguments about the function and utility of

military history have been at least temporarily resolved.

Nevertheless, uniformed officers and men have different opinions about the value of military history. That military history in one form or another is important has long been known. Debates about the proper way to study and use it continue, however, especially in Air Force institutions like the Air Force Academy and the Air University.³ By its nature history is a highly subjective discipline. A "high-tech" service like the Air Force sometimes struggles with subjects not easily quantified nor defined by workable equations. In general terms, however, it's fair to identify two Air Force approaches to the study of military history. I'll call these approaches intellectual and functional.

The intellectual approach to military history emphasizes its value in expanding the judgment, perception, and perspective of its students. Broad in scope, it calls for an understanding of military historical events inside a political and social framework. Identified in the late 1960s as the "new military history," it is related to Professor Michael Howard's study of military history in context.⁴ This type of approach is obviously important and cannot be dismissed.

No less important from the Air Force's point of view is the second general category, which emphasizes the functional value of military history. This approach often deals with the "lessons

learned" from particular events and is more didactic in its philosophy.⁵ Less sweeping and often more detailed, the functional approach to military history is a venerable favorite. Operational and "drum and trumpet" military history often falls in this category. To some extent this approach favors military training at the expense of pure academic study. Its utility is enhanced by the fact that a broad intellectual background in social and political affairs is not considered necessary to derive some value from it. The Air Force frequently takes this approach at its professional military education schools.

Both approaches to the study of military history are useful, particularly if used occasionally in combination as Howard suggests. Nevertheless, the Air Force should always look for further ways to make the study of military history more exciting and valuable to its personnel. Over the course of several semesters as an Air Force Academy instructor, I came to the conclusion that none of the "classical" approaches to military history was consistently effective in inspiring future aviators to lifelong study of the discipline. One problem for my students, and for many Air Force officers generally, is to find the time to make a commitment to professional reading programs.

There is another problem. Many Air Force officers, particularly aviators, have a difficult time relating much of the military history they read to what they expect to do in combat.

Those who advocate a functional or intellectual approach to military history normally connect what they read to the principles of war. They suggest, rightfully so, that air combat is related.

From time to time, however, this relationship between air combat and the principles of war is not altogether clear. To use but one example, it's not always easy to convince people with widely divergent backgrounds that their professionalism or combat effectiveness will be enhanced by a study of Caesar's Gallic Wars. Aviators who are used to dealing with state-of-the-art technology and high-speed aircraft are often reluctant to see any connection between what they are training to do and what was done on any battlefield more than 10 years earlier.

The purpose of this introduction is not to argue the merits of military history nor to review it's historiography in detail. These preliminary comments are designed only to set the stage for the balance of the essay which suggests an additional approach to military history; in my view one that is not receiving adequate attention in the Air Force. This approach, which emphasizes a comparative look at the human element in combat, is not altogether new. It was suggested in Carl von Clausewitz's monumental work On War when it was published in 1832.⁶ It promises a great payback for those who supplement their study with it.

Before proceeding too far, it's necessary to define just what I mean by the term "human element" military history. Generally speaking, this approach emphasizes an understanding of combat from an eyewitness perspective. It deals with the feelings, behavior, and reactions of soldiers to the experiences of the battlefield whether ashore, afloat, or airborne. It answers questions about what it felt like to be there. It often consists of graphic and gut-wrenching accounts of men under extreme circumstances. Grimly fascinating, it frequently tells us more about the combatant than about the actual events of conflict.⁷ For that, it is very useful.

Several recent books recognize this value and deal with the human element in the history of war. Among them, John Keegan's The Face of Battle should be given credit as one of the best in a series of examinations of the psychology of the battlefield. More recently, Richard Holmes' Acts of War focuses on combat experiences from the eyes of a participant. Other British and American authors have prepared similar studies. In virtually every case, these works are first-rate and deserve careful study by every potential combat leader.

Despite the obvious quality of these new efforts to explore the human dimension of combat, none of the books spends much time with aerial warfare. This is partly due to the relative youth of the airplane in the context of military use, but also because

these recent books have found similarities between air and ground combat difficult to define. Difficult or not, the similarities exist on the human level in a very tangible way. The paper which follows will explore some of these human similarities in the Napoleonic era of military history.

Why the Napoleonic era? First, that period is a natural selection. Sometimes called the "age of saber and lance," it is rich in eye-witness accounts of combat. Second, the Napoleonic Wars were the focus of Clausewitz's experiences and graphically demonstrate the effects of the human element in combat. We will be able to relate these human element effects to modern aerial engagements. Finally, by confining our examination to the Napoleonic period, we can demonstrate enough comparisons to show that this kind of approach will work in any period of military history. It will serve to limit the length of the essay without restricting its utility.

Thus, the following essay begins with a Clausewitzian examination of the human element in air combat, makes unusual Napoleonic comparisons, and concludes with a section relating military history to the Air Force's approach to war. By making direct comparisons between early 19th century ground combat and modern aerial warfare, it is possible to relate the effects of combat on its participants regardless of era.

Such comparisons can be important to Air Force personnel for

two reasons. First, as potential combat participants they need to learn as much about the nature of war as they can. Second, the relative lack of combat experience in today's Air Force mandates innovative study of military history. It's one of the ways we can assure success in the next war.

THE HUMAN ELEMENT IN AIR COMBAT: A CLAUSEWITZIAN ADDENDA

War is fundamentally a human phenomenon, a matter of emotions, aspirations, exertion, and suffering. Though concrete physical and statistical factors obviously play a role in determining conflict's outcome, war ultimately comes down to a contest of knowledge, intelligence, willpower, and human endurance.

Lieutenant Colonel John F. Guilmartin,
USAF, Ret., 8 October, 1982

The foundation of Prussian General Carl von Clausewitz's understanding of war was his recognition of the human element in combat. He believed that any study of war must take fully into account the living and moral forces on the battlefield. War, he concluded in a famous passage, exists in an atmosphere of danger, physical effort, uncertainty, and chance.⁸ For humans to operate successfully in combat, they must recognize these elements and compensate for them appropriately. For purposes of this essay, and, in general for the best results in a reading program, it is useful for students of military history to keep Clausewitz's factors in mind as they reflect on any combat narrative. In other words, to take advantage of a human element approach to the study of military history, it is helpful to know something of Clausewitz. At the same time, dealing with the history of air combat requires some creative interpretation on the views of the Prussian general.

Danger, for example, has an expanded meaning for airmen. In addition to the already considerable physical threats of violence, wounds, or death that any combatant faces in battle, an airmen routinely assumes the extraordinary risks of aerial flight as well. While not nearly so glamorous as fighting an identifiable enemy, the day-to-day hazards of flight operations take a steady toll of airmen in war or peace. Hundreds of factors combine to increase the atmosphere of danger within which the modern aerial warrior must operate. Some of these factors are a natural result of technological advances designed to keep him aloft, alive, and fighting in an essentially hostile environment. Others relate directly to the normal perils associated with flying.⁹

These latter include weather, equipment breakdown, and general flying safety. Altogether they confirm to aviators that flying can be an extremely dangerous activity whether or not one is involved in actual combat. As a matter of fact, a statistical analysis of several major aerial campaigns from 1940 forward indicates that the average flyer is almost as likely to die in an accident as he is to get shot down. From about the middle of World War Two until today, almost fifty percent of any aircrew losses were due purely to flying, and not combat, related mishaps.¹⁰ These losses were due to a variety of causes including engine failures, mid-air, airfield accidents, running out of fuel, and getting lost. Additionally, a significant

proportion came in take-off and landing accidents. Frequently a function of "pilot error," the attrition rate reveals an additional dimension to the human element in air operations.

Similarly, the physical demands on aviators are at least as great, and sometimes greater than, those for the typical ground combatant. The physiological stresses associated with flight have been well documented. Flying of any kind is often a demanding and rigorous activity. Fatigue, stress, and exertion are components of almost any flying experience. In combat these elements are exacerbated by fear and time compression.¹¹

The relationship between fatigue and performance in air combat is well documented historically. Pilots quickly tire under the strain of continuous action, and tired pilots often exhibit fatigue symptoms which include channelized attention, decreased peripheral vision, and lengthened reaction times.¹² Such symptoms contribute to the risk of casualties. Furthermore, unlike earthbound soldiers, aviators cannot usually take catnaps when flying in proximity to combat. Even superbly trained and conditioned pilots eventually need rest. Air combat can require almost superhuman physical effort. Japanese WWII ace Saburo Sakai describes his exertions in an epic engagement against fifteen American Hellcats this way,

My arm was beginning to go numb from the constant rolling to the left to evade the Hellcat's tracers...[

cannot remember how many times the fighters attacked nor how many times I rolled away. The perspiration rolled down my body, soaking my underclothes. My forehead was all beads of sweat, and it began to drip onto my face...I must keep rolling!¹³

Successful pilots must also contend with the possible effects of hypoxia, spatial disorientation, visual phenomena, and altitude disorders, among many other things. All these can levy strenuous physical demands and are responsible for a large percentage of all flying accidents. The presence or threat of combat merely increases their potential impact. One of the more dangerous phenomena is the loss of consciousness which can be induced by a rapid onset of "G" forces called "G-LOC." Modern jet fighter pilots are particularly vulnerable to this occurrence as their aircraft become more capable of both instantaneous and sustained high rates of turn. One F-18 aviator recalled an incident which would have obvious consequences in combat,

I was pulling 7.7 G in about 1.5 seconds. I lost consciousness. There was absolutely no warning that this was about to occur. I remember coming to, not having any idea where I was.¹⁴

As intense as these physical demands on aviators can be, the mental strain of flying can be worse. A famous cliché characterizes flying as "hours and hours of sheer boredom, punctuated by a few minutes of absolute terror." The saying

survives precisely because it addresses one of aviation's greatest truths. Flying is as much a skill of mental agility and acumen as it is a physical activity.¹⁵

This is especially true in air combat, where observers have often lauded the value of the smart pilot over the "natural" one.¹⁶ In this case, "smarts" corresponds, in part, to a pilot's ability to adjust to the mental strain of flying. The most successful pilots sometime have a healthy dose of both attributes, a situation which has occurred several times in the history of air combat. More important, successful combat aviators have to deal with the persistent state of fear which veterans say takes the greatest toll.

In this regard, Colonel Jack Broughton's graphic account of the bombing campaign over North Vietnam in 1967 illustrates the psychological pressures of air combat. Day after day, relatively senior USAF pilots were asked to bomb targets of questionable value. Despite their tremendous exertions and great gallantry, the war went on and on. Further, they watched scores of their comrades go down over the jungles of Southeast Asia. Broughton was talking about the impact of fear when he said,

Anyone who isn't scared is an idiot. It is completely plausible and quite a scintillating experience to be able to translate this being scared into the most dynamic courage and a determination to get the job done properly.¹⁷

Broughton's first-hand observations reflect an increasing combat intensity related to the high technology of air warfare. Despite his brilliance, Clausewitz might have had difficulty anticipating the unique demands placed on the bodies and minds of modern airmen, particularly with today's equipment quite capable of outperforming its operators.

On the other hand, Clausewitz might have had more success understanding the uncertainty associated with air combat. Uncertainty caused by a lack of information about the size or intentions of an enemy was a feature of 19th century battlefields that the Prussian spoke about at great length. During aerial combat in World War II uncertainty about the enemy's strengths and capabilities lead to some of the most important decisions in the history of air warfare. During the Combined Bomber Offensive, for example, Allied planners had a tendency to switch targets just as the full impact of their previous raids was beginning to be felt. Some historians say this seriously reduced the potential decisiveness of American and British efforts.¹⁸

Modern technological advances notwithstanding, tactical air combat can also be characterized by a great deal of uncertainty. The virtually unlimited size and scope of the air battlefield make absolute knowledge of the enemy problematical. Breakthroughs in equipment designed to provide pilots with information about their enemies are almost always offset by

countermeasures. If recent experience is any guide, some of the fundamental rules of engaging and destroying an enemy in the air haven't changed much since 1916.¹⁹ Oswald Boelcke, one of the most famous fighter pilots of World War One, summarized the best way to turn the uncertainties of air combat against an enemy, by saying, "See the enemy before he sees you...Always attack when least expected."²⁰ Complex radar equipment designed to provide instantaneous warning or acquisition of an enemy still often gives way to this time-honored visual rule of engagement. Modern airmen, like their terrestrial comrades-in-arms, must counteract the uncertainty or a lack of information about their enemy with aggressive reconnaissance or creative tactics.²¹

Similarly, air combat is often dominated by chance. Clausewitz identified chance as the unpredictable elements or unforeseen obstacles that inhibit or stimulate activity. As significant as chance was to the outcome of 19th century affairs, the complexity and scope of modern air operations are a guarantee that the impact of chance will be magnified. Air combat and the equipment it requires have never been simple in relative terms, even since their earliest introduction. The trend is toward increasing sophistication. Complexity increases the probability that chance will contribute to a general breakdown in orderly or fully predictable operations.²²

World War Two amply demonstrated the impact of chance on air

warfare. During the Battle of Britain, for example, the German bombing of London in late August, 1940 resulted in British retaliation and the critical shift of the Luftwaffe's targets. Some historians say this action was most responsible for Britain's eventual victory.²³ In 1942 at the Battle of Midway, a fortuitous turn taken by the leader of an American dive-bomber formation led directly to one of the most decisive victories in naval history.²⁴ Low on fuel and in danger of turning back, Commander Wade McCluskey was nevertheless lucky enough to find four vulnerable Japanese aircraft carriers and sink three.

It's apparent this kind of Clausewitzian air combat analysis expands the classic definitions of danger, exertion, uncertainty, and chance. The unique nature of war in the air nevertheless supports Clausewitz's fundamental notions about the importance of the human element in combat. Further, Clausewitz cited his four factors as critical to forming the overall atmosphere of war. This he called "friction." Friction, according to the Prussian general, distinguished real war from war on paper.²⁵ Since military history is, in a very real sense, "war on paper," more direct human comparisons can further help to bridge the gulf Clausewitz so often referred to. They can make all military history more relevant to future combat aviators.

GROUND AND AIR COMBAT: SOME NAPOLEONIC COMPARISONS

What battles have in common is human: the behavior of men struggling to reconcile their instinct for self-preservation, their sense of honor and the achievement of some aim over which other men are ready to kill them.

John Keegan, The Face of Battle

The behavior of men in battle is complex and beguiling. Clearly, war brings out the widest range of human emotion and conduct. War and battle constitute high drama in its purest form. This characteristic makes it almost impossible to read military history and not be swept up in battle narratives which speak, among many other things, of violence, compassion, heroism, cowardice, bravery, and fear. With a little imagination it's possible to live any combat experience vicariously.

Precisely because this last statement is so, those without direct combat experience must try to take advantage of the knowledge of those who have, in the quaint American Civil War phrase, "seen the elephant." It's fair to say that most of those who presently serve in the Air Force haven't had the opportunity to be a target for hostile arms. This doesn't imply for a moment that some future appointment with combat won't come. It does make it abundantly clear that potential combatants must read and ponder the battle narratives of the past. To this end, the previous section noted some of the human element implications of

air combat. If we keep these in mind, it's possible to make direct historical comparisons between Napoleonic warfare and air combat. Once again, the goal will be to demonstrate the one constant which runs throughout all military history; namely, the role of man.

It's impossible to single out any particular emotion, circumstance, or example of behavior and demonstrate its primacy on the battlefield. There are far too many to consider adequately. If, however, we want to limit our analysis to very general categories, as a starter we might select motivation, action under fire, cohesion, and leadership. These seem to be the areas most commonly identified by military historians as significant to man's performance in combat.²⁶ Further, they serve as a framework within which air combat and Napoleonic combat may be compared.

MOTIVATION

Motivation, sometimes called "the will to combat," clearly relates to both forms of warfare. An explanation of the nature and character of motivation has been the subject of many volumes. For our purposes it is necessary only to highlight and compare some of the motivations to do battle in the air.

The motivation to air combat can easily be identified with 19th century concepts of honor and chivalry. The earliest combat

aviators were often compared to dashing cavalrymen of the Napoleonic Wars. Most of the comparisons were driven by the need for governments to create heroes, mired as the armies were in the tragedy of surface stalemate. The new, glamorous, and relatively clean air war provided the kind of setting necessary for the creation of these heroes and the terminology which went along.²⁷

A closer examination of typical Napoleonic cavalrymen reveals that these superficial comparisons are more accurate than might be expected. Consider, for example, historian David Chandler's description of Napoleonic hussars as "the darling of the ladies...expected to maintain the highest standard of bravery, swaggering bravado, and boasting."²⁸ Such a description could easily fit the stereotypical combat aviator, especially fighter pilots.

According to Chandler, part of the motivation for cavalry combat was the love of fighting, sport, and hunting. Combatants admired their mounted enemies for upholding similar ideas. Cavalrymen were admonished to ride well, die unflinchingly, and acknowledge courageous opponents. So too are fighting airmen.²⁹

Examine the words of the famous German ace, Baron Manfred von Richthofen. His letters and combat reports are filled with allusions to chivalry, sportsmanship, the cavalier spirit, and hunting. He recorded his impressions of his most famous

adversary, Major Lance Hawker, V.C., in terms strikingly similar to those used by a participant at a 19th-century cavalry duel:

But he was a plucky devil. With me behind and above him, he even turned round and waved his arm at me, as though to say, 'How is it going?' He was a fine sportsman, but I knew that in time my close presence behind him would be too much for him.³⁰

Richthofen demonstrates a similar tone when he criticizes his brother, also an ace, for being too much of a shooter, and not enough a hunter. The motivation to combat, Richthofen believed, should be that of the 19th-century cavalry competitor, not the hot-blooded zealot.³¹

These kinds of sentiments are not reserved only for romantic notions of the First World War. During the Battle of Britain, for example, a British fighter pilot described his motivation to combat this way,

It's love of the sport rather than sense of duty that makes you go on without minding how much you are shot up.³²

Obviously, sportsman-like competitiveness was not the only motivator for 19th-century cavalymen nor for modern aviators. The will to combat must be driven by an intense desire to defeat the enemy. Colonel Charles H. MacDonald, a World War Two ace with 27 kills, put it this way,

If I were to pick out the most valuable personal traits of a fighter pilot, aggressiveness would rate high on the list. Time and again, I have seen aggressive action, even from a disadvantageous position, completely rout a powerful Nip formation.³³

Colonel MacDonald's comments on aggressiveness, and by implication resolution, may be considered a restatement of the thoughts of a 19th-century "ace" of cavalry, Joachim Murat. Murat, a Marshal of France, was famous for his incredible bravery and aggressiveness on the battlefield. He was reputedly fond of saying, "Show me a hussar older than 30 years, and I'll show you a coward!"³⁴

While it's not possible to speak for all participants and every engagement, it's clear from even superficial analysis that there is a connection between the motivation to air combat and the esprit of Napoleonic cavalrymen. Battles in the air can be directly compared to 19th century encounters on this basis.

UNDER FIRE

In combat the actual circumstances of directly confronting an enemy can vary widely. Despite this, even a cursory examination of combat narratives reveals frequent similarities in the behavior and feelings of participants. In the most general terms, it's fair to say most combatants feel, at one time or the other, either brave, afraid, aggressive, timid, lonely, or

confused. We find these kinds of feelings often expressed in stories of both the Napoleonic period and throughout modern aerial warfare. Moreover, the actual details of the engagement resemble each other.

Eyewitness accounts of air-to-air engagements can sound hauntingly like written histories of cavalry encounters. An American, Oscar LeBoutillier, described a typical World War One dogfight this way,

In those few vicious moments the sky was literally filled with tracers; thin, white threads crisscrossing in every direction. Aeroplanes were everywhere. They flashed in and out of the clouds, above, below, and in front of me. I had my hands full trying to get onto an enemy's tail, avoid a collision, and get a burst off. It was like trying to catch lightning in a bottle!³⁵

LeBoutillier's observations match this description of a Napoleonic cavalry encounter:

The impact would usually result in a melee, in which both sides would lose formation, and the soldiers would mingle in a formless mass of individual combats...It was almost impossible to control cavalymen who had just sustained and survived an impact and were fighting at close quarters for life, loot, and glory.³⁶

Not surprisingly, these kinds of experiences evoke the strongest emotions in soldiers and airmen. Frequently the violence and stress of their circumstances seems to overwhelm the combatants. That they continue to function at all is a tribute

to man's ability to prepare warriors for the impact of combat.

In this regard, aerial warfare is all too often depicted as relatively clean, even antiseptic. Nothing could be further from the truth. Imagine the scene inside a B-17, as it was vividly recorded by a veteran of the Schweinfurt raids,

The bombers drive ahead through a whirlwind of steel splinters and flame and jagged chunks of red-hot metal. The steel is everywhere: it crashes into wings and engines, slams into bulkheads and airplane bodies. And into the bodies of men, spewing out blood, tissue, intestines, and brains.³⁷

Inside the dressed formations of Napoleonic infantry, a soldier's view was not very different from his 20th-century flying counterpart,

One shot killed and wounded 25 of the fourth Company, another of the same kind killed poor Fisher, my captain, and 18 of our company...and another took the eighth and killed or wounded 23...At the same time poor Fisher was hit I was speaking to him, and I got all over his brains, his head was blown to atoms.³⁸

It's remarkable that anybody could function in such an environment. Even so, if we look at some of the reflections of combat participants as they examine their own feelings during the actual moment of confrontation, we find other comparisons.

Doubtless a high percentage of participants are scared stiff, but carry on despite their fears. Captain Richard S. Drury, a USAF A-1E pilot, described diving on enemy gun positions during

the Vietnam War this way,

I felt a sort of a cold numbness throughout my body as I rolled in on the muzzle flashes below. The tracers came up the way heavy hail comes down from a thunderstorm. I was scared and breathing hard. The pass seemed like an hour, but only seconds passed until I was pulling up and jinking away.³⁹

The tone of Drury's comments, and the physical aspects of his situation are similar to those experienced by Captain Cavalie Mercer near Mont St. Jean in 1815. Mercer and his artillery troop, like their aviator counterpart, were the subject of intense enemy fire,

A black speck caught my eye, and I instantly knew what it was. The conviction that one never sees a shot coming towards you unless directly in its line flashed across my mind, together with the certainty that my doom was sealed...Under such a fire, one may be said to have had a thousand narrow escapes; and made me feel in full force the goodness of him who protected me among so many dangers.⁴⁰

Even without further examples, it's fair to conclude that much of the physical circumstances and human behavior of combat participants in both the Napoleonic Wars and modern aerial combat are related. This relationship is further demonstrated if we consider cohesion.

COHESION

By any definition cohesion is one of the most important human elements in any combat. General S. L. A. Marshall's classic work Men Against Fire identified it as the difference between defeat and victory when in contact with the enemy. Soldiers who maintain group integrity and feel the common bonds of support consistently perform better when engaged. Marshall's research pinpointed cohesion as the pivotal factor in ground combat participation.⁴¹ For an infantryman or cavalryman of the Napoleonic era, this meant advancing and using their weapons against the enemy.

Loss of cohesion can lead to disaster, especially in offensive operations. Consider for a moment one of the more famous incidents relating to this situation. It occurred at the Battle of Waterloo in 1815. Early in the engagement French infantry advanced against Wellington's left center. Met by steadfast British infantry and artillery, the French were repulsed. Wellington thereafter directed the British cavalry to charge and complete the rout. The French fled, but the British horsemen, excited by their victory, lost all cohesion. A participant observed,

In fact our men were out of hand...every officer within

hearing exerted themselves to the utmost to reform the men; but the helplessness of the enemy offered too great a temptation. If we could have formed a hundred men we could have made a respectable retreat, and saved many; but we could effect no formation, and were as helpless against their [counter] attack as their infantry had been against us.⁴²

The British failure to maintain cohesion was caused by their eagerness, overaggressiveness and eventual panic. It led to their destruction.

Cohesion is no less important to the combat aviator. Among other things, formation flying is designed to foster teamwork, mutual support, and cohesion.⁴³ From the earliest days of aerial combat, loss of formation or loss of cohesion often proved fatal. This principle was frequently demonstrated during World War Two.

As an example, let's look at the account of U.S. Navy ace Edward "Butch" O'Hare as he described attacking a much larger group of Japanese fighters,

The entire enemy formation scattered as we tore into them. They broke up into sections and singles, climbing vertically in panic to gain precious altitude...The battle seemed to last an hour, but actually it lasted only a few minutes...The record credited our lonely eight Hellcats with 23 confirmed kills and 11 probables.⁴⁴

In O'Hare's dogfight the Japanese were not able to maintain any kind of defensive cohesion and were defeated.

The accounts of rarely publicized Soviet-Israeli dogfights over the Suez Canal in 1970 repeat the message of the previous

passage. According to Israeli participants, the Soviet MIG pilots tended to lose cohesion, even break up and panic, as soon as the engagement started. The Russians flew,

like a bull after a red flag. As though they were knocking their heads against a wall. They were like ripe fruit waiting to be picked.⁴⁵

These comparisons to the unfortunate British cavalry more than a century before are obvious. Whether engaged offensively or defensively cohesion can become a vital measure of success.

Another dramatic example of the importance of cohesion to 19th century battlefields was the use of the square. Employed by infantry to defend itself against cavalry charges, the success or failure of the formation was absolutely dependent on the integrity of its component sides. If, as in the Battle of Quatra Bras in June, 1815, an infantry square's cohesion was broken, disaster could result:

The 2nd Battalion 44th Regiment was attacked in the rear by the Lancers, who were slaughtering our supernumeraries and rear rank men.⁴⁶

If, however, the square managed to maintain its cohesion, it was generally impervious to even the most violent mounted attack. Only with the help of artillery might the normal outcome be changed. Attackers therefore made great efforts to bombard the

square with missile weapons in the hopes of making it disintegrate. Timely charges were designed to complete its dissolution.

It therefore doesn't take a great deal of imagination to compare the Napoleonic infantry square to a World War Two B-17 combat formation. Created by Air Force General Curtis LeMay precisely to improve cohesion and defensive firepower, the "Combat Box" was also only as good as its components.⁴⁷ German attempts to destroy the cohesion of the combat box and break-up a formation of bombers sound just like the combined attempts of French cavalry and artillery to reduce British squares at Waterloo.

1943: As the stream of Flying Fortresses neared the target, a definite change in the pattern of attacks emerged. The masses of twin-engine strikes sent rockets into the midst of the formations, scattering the planes and diluting the effectiveness of their defensive fire screen. The moment a cripple showed, a swarm of single engine fighters immediately pounced to deliver the coup de grace.⁴⁸

1815: Late in the day the French had brought up two guns on the crest of our position, which fired grape into our square with very deadly effect...though suffering sadly, and disordered by our poor wounded fellows clinging to their comrades thinking they were being abandoned, our little square retained its formation, and we reached the hedge.⁴⁹

For a more up-to-date comparison to air combat, we need only look to the B-52 cell and trail formations used in the Linebacker bombing campaigns over North Vietnam. It's not a radical jump of

the mind to think of the electronic counter-measures of the cells as contiguous sides of a defensive structure. It should come as no surprise that the North Vietnamese attempted to bombard the sophisticated B-52 "squares" in a way similar to their 19th-century French counterparts. North Vietnamese surface-to-air missile barrages appear designed to break the integrity of the cells and bomber streams as they approached the target area.⁵⁰ Dealt with individually, the B-52s were far more vulnerable.

LEADERSHIP

In the often chaotic conditions of battle, the psychology of leadership remains timeless. Despite individual styles, successful combat leaders often seem to share several common personality traits.⁵¹ Without citing in detail these characteristics, we note that the circumstances under which they manifest themselves resemble each other.

Consider, for example, the courage and determination of Napoleonic officers as they tried to rally their men to attack the enemy. A British foot-soldier had this to say about the impact of his commander,

General Graham at this critical moment darted to the front, and by one short word, loud and inspiring, made nought of the [French] marshal's bravery and

combinations. The word was, 'Charge!' Like electric fluid it shot from the centre of the British line to the extremities of its flanks, instantaneously followed by the well-known thundering British cheer, sure precursor of the rush of British bayonets.⁵²

Though almost 100 years later, Captain Eddie Rickenbacker would have a similar electrifying effect on the 94th Aero Squadron, as it faced a period of mounting casualties. A veteran who observed Rickenbacker notes the former race-car driver's role,

He drove himself to exhaustion. He'd fly the required patrol. Then he and I would come back to the field, have a cup of coffee, get into our second ships and go hunting by ourselves. Most of the pilots he killed never knew what hit them. Out of the sun, a quick burst and gone...he developed into the most natural leader I ever saw.⁵³

Gallantry in combat can also be a common denominator of any age and situation. We can therefore find frequent circumstances where individual acts of heroism sound almost identical. Judge the similarities in these examples of courage in the face of adverse odds.

He was a brave fellow, and bore himself like a hero; with his sword waving in the air, he cheered the men on, as he went dashing upon the enemy, and hewing and slashing them in tremendous style. Fine fellow! His conduct indeed made an impression upon me that I shall never forget.⁵⁴

In company with the other fighters, First Lieutenant DeBlanc instantly engaged the hostile planes, and aggressively countered their repeated efforts to drive off our bombers. DeBlanc courageously remained on the scene despite a rapidly diminishing fuel supply and, boldly challenging the enemy's superior numbers of float planes, fought a valiant battle against terrific odds.⁵⁵

Some may yet contend that these kinds of comparisons are too contrived. It's fashionable nowadays to point to the incredible acceleration in the technology of warfare and argue the fundamental nature of combat has changed.⁵⁶ If this argument is valid any comparisons between modern warfare and warfare of the past are meaningless. In the skewed logic of this line of reasoning, machines are more important in war than man.

This view is not supported by eyewitness evidence from contemporary battlefields or air combat engagements. Admittedly, many things have changed in conflict since the Napoleonic Wars. The physical factors of battle are different. The size and composition of forces vary greatly. Spatial and geometric relationships are altogether different. Terrain cannot be compared and logistical factors are ages apart. All these aside, several noted experts would agree that the combat psychology of participants in both eras remains essentially the same.⁵⁷ In the words of one,

Despite the appearance of thermonuclear weapons and intercontinental delivery vehicles, the outcomes of battles still hinge, often as not, on the vision, determination and courage of a comparatively small percentage of the combatants involved.⁵⁸

On this basis, combat comparisons from any era and any form of warfare remain valid.

WHERE DO WE GO FROM HERE?

Combat psychology constitutes the most stable, most timeless dimension of war. While the political goals of a particular conflict, weapons technologies, and above all else, the tactics appropriate against a given adversary on a given day can all change virtually overnight, "combat is combat and a combatant is a combatant."

Lt Colonel Barry D. Watts, USAF
Foundations of U.S. Air Doctrine

Now that we have concluded our short survey of Napoleonic and air combat comparisons, it might be fair to ask, "of what immediate value is an historical analysis of this sort?" I believe the answer to the question lies in the ongoing Air Force struggle to define an effective doctrine of airpower. The background to this struggle is summarized by Colonel Barry D. Watts' excellent book The Foundations of U.S. Air Doctrine. Watts' thesis is that the United States Air Force has a "mechanistic" approach to war. He argues convincingly that American airpower advocates have too often regarded war as one vast engineering problem.⁵⁹ Citing historical data derived from the Combined Bomber Offensive of World War Two, Watts documents his assertions well. Bringing his analysis up to date, he uses the Clausewitzian concept of friction as the basis for assessing contemporary U.S. air doctrine. In the simplest terms, he believes the Air Force pays too little attention to

friction and thereby still largely ignores the human element in combat.⁶⁰

Colonel Watts is not alone in this assessment. Others have criticized Air Force Manual 1-1, as well as previous doctrine publications, for their "scientific" approaches to war. In general, Air Force doctrine emphasizes the principles of war to the exclusion of comments on war's nature. According to some, this gives current doctrine something of a superficial nature.⁶¹

Superficial or purely quantitative approaches to war can be dangerous. We can infer from Colonel Harry Summers' book On Strategy, that the U.S. armed forces' attempt to use statistical data and numbers to plot the course, and even predict the outcome, of the Vietnam War was a disaster. Summers criticized any theory which, "reduced war to an academic model."⁶²

If we accept this kind of analysis, it's apparent the Air Force must still make some major adjustments in its approach to the study of war. Otherwise, the United States risks Vietnam-like defeats in future operations.

Unfortunately, there are no easy solutions when it comes to readjusting what one historian identified as, "the American way of war."⁶³ Colonel Watts is a pessimist. He finishes his study with a plea for what he calls an "organic" approach to war. This would require a focus on the psychology of combatants and the role of friction in conflict. It implies a view of war, combat, and leadership which is closer to the model established by the German

Army early in its history.⁶⁴

If we are to act on the kind of advice offered by professionals like Summers and Watts, I believe the process must begin with innovative looks at the study of military history. This is the primary reason a comparative analysis of ground and air combat across the spectrum of history might be immediately useful.

It's also useful because there aren't many people left in the armed forces of the United States with direct combat experience. Surveys of the major USAF commands indicate the percentage of actual combat veterans flying among the officer force is less than 12 percent.⁶⁵ This number is dwindling rapidly, as death and retirements take their tolls.

Short of spending a great deal of time with combat veterans, about the only way to learn of the nature of war is to study first-hand accounts. Even so, it's very important that potential combat aviators don't confine themselves strictly to the observations of past aerial warriors. As we've seen, there are enough similarities in the Napoleonic era to justify a lifetime of study in that one period alone. The same is true for virtually any age of conflict.

Ultimately, the question for all those with the potential for serving in combat must be, "How can I improve my understanding of myself and the nature of war?" The answer can begin with a comparative study of the human element in military history.

FOOTNOTES

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